

APPENDIX 8 – VISUAL RESOURCES MANAGEMENT (VRM)

Class I

To preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II

To retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III

To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV

To provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic landscape elements.

The VRM system, therefore, provides a means to identify visual (scenic) values, establish objectives through the Resource Management Planning process or on a case-by-case basis for managing these values, and provides timely input into proposed surface-disturbing projects to ensure the assigned objectives are met.

APPENDIX 9 – PAYMENTS IN LIEU OF TAXES (PILT)

The following is from BLM's website that describes the Federal government's PILT program.

Sec. 1881.31 How does BLM calculate section 6904 payments? Congress appropriates PILT payments each year. The BLM allocates payments according to a formula in the PILT Act that includes population, receipt sharing payments, and the amount of Federal land within an affected county.

BLM calculates payments by determining 1% of the fair market value of the purchased land and comparing the result to the amount of real estate taxes paid on the land in the year prior to Federal acquisition. The payment to qualified units of general local government will be the lesser of the two. (43 CFR Part 1880)

BLM computes payments authorized under section 6902 of the Act using the greater of the following two alternatives:

(A) \$1.99 (in fiscal year 2002) times the number of acres of qualified Federal land in the county (as defined above), reduced by the amount of funds received by the county in the prior fiscal year under certain other Federal land receipt sharing programs such as the twenty-five percent timber program or the mineral leasing program

-or-

(B) Twenty-seven cents (in fiscal year 2002) times the number of acres of qualified Federal land in the county, with no deduction for prior-year payments.

Both alternatives explained above are subject to a population ceiling limitation computed by multiplying the county population times a corresponding dollar value (adjusted annually for inflation) contained in the Act.

Section 6904 and 6905 payments are computed by taking one percent of the fair market value of land acquired for addition to the National Forest or National Park systems and comparing the result to the amount of property taxes paid on the land in the year prior to Federal acquisition. The county payment is the lesser of the two.

Section 6904 payments are made annually for a period of five years. The first payment begins in the Federal fiscal year following the fiscal year in which the land was acquired by the Federal Government, unless mandated otherwise by law.

Section 6905 payments are also made annually but continue until five percent of the fair market value is fully paid. The first payment begins in the Federal fiscal year following the fiscal year in which the land was acquired by the Federal Government, unless mandated otherwise by law. However, the yearly payment may not exceed the lesser of one percent of the fair market value or the property taxes that were assessed prior to Federal acquisition.

Congress sets annual funding limitations that may also affect the amount of PILT payments. Funding limitations are equitably applied to all payments under the program. Any PILT payment or portion of a payment that is not made as a result of funding limitations is not carried forward to future years.

APPENDIX 10 – FEDERAL LAWS AND PROGRAMS

The followings laws contain specific procedural activities or performance levels that BLM must undertake or achieve prior to finalizing land use planning decisions:

Americans with Disabilities Act, 42 U.S.C. 12101 et seq.
American Indian Religious Freedom Act, 42 U.S.C. 1996
Archaeological Resources Protection Act, 16 U.S.C. 470aa, et seq.
Clean Air Act, as amended, 43 U.S.C. 7401 et seq.
Clean Water Act, 33 U.S.C. 1251 et seq.
Coastal Zone Management Act, 16 U.S.C. 1451-1464
Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9615
Emergency Military Construction Act of 2000 (Pub. Law 106-246, 114 Stat. 511 (July 13, 2000))
Endangered Species Act, 16 U.S.C. 1531, et seq.
Executive Order (E.O.) 11990, Protection of Wetlands (5/24/77)
E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (2/11/94)
E.O. 13112, Invasive Species (2/3/99)
E.O. 11988, Floodplain Management (5/27/77)
Federal Land Policy and Management Act, 43 U.S.C. 1701, et seq.
Federal Noxious Weed Act (7 U.S.C. 2801-2814, January 3, 1975, as amended.)
Federal Water Pollution Control Act, 33 U.S.C. 1344
Fish and Wildlife Coordination Act, 16 U.S.C. 661-664
Government Performance and Results Act of 1993 5 U.S.C. 306, et seq.
Land and Water Conservation Fund Act, 16 U.S.C. 4601-4 through -11
National Environmental Policy Act, 42 U.S.C. 4321, et seq.
National Historic Preservation Act, 16 U.S.C. 470, et seq.
Omnibus Interior Appropriations Act of 2000
Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.
Rivers and Harbors Act, 33 U.S.C. 403
Surface Mining Control and Reclamation Act, 30 U.S.C. 1201, et seq.
Wild and Scenic Rivers Act, 16 U.S.C. 1271, et seq.
Wilderness Act, 16 U.S.C. 1131, et seq.

Applicable Federal Regulations

- o 36 CFR 800, et seq., historic properties
- o 40 CFR 1500, et seq., NEPA regulations
- o 43 CFR 1610, land use planning
- o 43 CFR 2800, right-of-way corridors
- o 43 CFR 2920, leases, permits and easements
- o 43 CFR 8340, et seq., off-highway vehicle use

o

APPENDIX 11 - STATE OF MARYLAND LAWS AND PROGRAMS

State of Maryland Laws

Forest Conservation Act of 1992

Maryland Historic Preservation Law

Maryland's Planning Law

Chesapeake Bay Critical Area Act of 1984

Plans and Programs

- Chesapeake Bay Critical Area Program
- DNR Land Unit Designations
- Forest Service Program Summary
- Maryland Coastal Zone Program
- Natural Heritage Program
- Program Open Space
- Smart Growth and Neighborhood Conservation Initiatives
- State (Air Quality) Implementation Plan

Natural Heritage Program

The Natural Heritage Program (NHP) is the lead program within DNR for the implementation of the State's Nongame and Endangered Species Conservation Act (Act). The NHP identifies and protects the State's rare plant and wildlife species and natural communities. The NHP's database is the State's centralized source of information concerning the locations as well as protection and stewardship needs of these rare species and natural communities. Addressing the mandates of the Act to conserve native species of wildlife and plants, assist in their protection, and insure their perpetuation within their ecosystems, the NHP:

- Assists private and public conservation organizations (including county planning and zoning agencies, Maryland Environmental Trust, local land trusts, The Nature Conservancy, and the Chesapeake Bay Foundation) in identifying important plant and wildlife habitats to protect and in developing and implementing protection plans for these natural areas;
- Informs private landowners and public land managers about habitats for rare species and natural communities, encourages the voluntary protection of these areas, and assists in developing and implementing protection plans to conserve these significant habitats, including habitat restoration when necessary;
- Maintains the State's Threatened and Endangered Species list and natural community classification; and
- Reviews land use proposals submitted to State agencies for approval or funding for potential impacts to rare species and natural communities, works with agencies and applicants to seek alternatives that reduce or eliminate impacts, and recommends permit conditions that afford protection to listed species and their habitats.

Maryland Forest Service Program Summary

The Maryland Forest Service provides technical forest management advice to manage State Forests and lands. Multiple use management recommendations concerning the management of forested ecosystems is coordinated with professionals from the Wildlife and Natural Heritage Division in order to provide conservation recommendations to conserve and promote the natural resources on the property.

The Forest Service is available to provide forest management recommendations, forest buffer establishment, habitat protection recommendations, fire protection and general forest health monitoring/management. A Forest Stewardship Plan will identify the goals and objectives of the property manager, and give detailed management recommendations on how to achieve these goals while protecting sensitive habitats. Objectives include but are not limited to fish and wildlife habitat protection/enhancement, soil and water conservation, natural heritage/recreation promotion and forest product management.

Chesapeake Bay Critical Area Program

The Chesapeake Bay Critical Area Act, passed in 1984, directed all local governments within the Chesapeake Bay watershed to develop individual critical area programs that would function as a comprehensive land use strategy for preserving and protecting Maryland's most important natural resource, the Chesapeake Bay.

The law identified the "critical area" as all land within 1,000-feet of the mean high water line of tidal waters and the landward edge of tidal wetlands and all waters of, and land under, the Chesapeake Bay and its tributaries. The law created a statewide Critical Area Commission, comprised of 27 members, representing various regions of the State and State agencies, to oversee the development and implementation of local land use programs directed towards the Critical Area that met the following goals:

- Minimize adverse impacts on water quality that result from pollutants that are discharged from structures or conveyances or that have run off from surrounding lands;
- Conserve fish, wildlife, and plant habitat in the critical area; and
- Establish land use policies for development that accommodate growth and also address the fact that, even if pollution is controlled, the number, movement, and activities of persons in the critical area can create adverse environmental impacts.

The commission developed criteria that included goals, objectives, policies, and standards that require local governments to use to develop their critical area programs. There are critical area programs in sixteen counties, 44 municipalities, and the City of Baltimore. In general, these programs are implemented through and incorporated into local comprehensive plans, zoning ordinances, and subdivision regulations, although some jurisdictions implement their programs through a stand alone ordinance or plan. The programs are comprehensive and are specific to each local government, addressing the unique characteristics and needs of each jurisdiction.

All local critical area programs classifies all land within the critical area as either:

- Resource conservation area,
- Limited development area, or
- Intensely developed area.

These classifications may function as overlay zones or may be related to actual zoning classifications in the jurisdiction. Within each classification, there are various policies and standards that regulate development activity, including forest and woodland protection provisions, impervious surface limits, density and land use restrictions, water quality standards, and habitat protection requirements.

In addition, there are provisions that regulate water-dependent facilities, shore erosion control, timber harvesting, and agriculture. These provisions are essentially performance standards that are designed to minimize adverse environmental impacts associated with these activities while recognizing their importance and value as resource utilization and conservation activities.

Each local program also identifies habitat protection areas (HPAs) that are specifically defined and require special protection measures. HPAs include the following resources:

- 100-foot buffer (from tidal waters, tidal wetlands, and tributary streams)
- Threatened and endangered species and species in need of conservation
- Natural Heritage Areas
- Colonial waterbird nesting sites
- Historic waterfowl staging and concentration areas
- Riparian forests that provide habitat for Forest Interior Dwelling [Bird] Species (FIDS)
- Large forested tracts that provide habitat for FIDS
- Anadromous fish propagation waters

The critical area criteria prohibit new development activities within the 100-foot buffer. The criteria protect other HPAs from the adverse impacts of development and human activity in such way that the areas are conserved and continue to function as habitat. These provisions vary depending on the type of habitat but include measures such as required buffers, time of year restrictions on development and clearing, and watershed management plans.

The Critical Area Act regulations serve as an innovative and comprehensive approach to conserving the numerous and diverse natural resources that comprise the Chesapeake Bay watershed. The regulations promote environmentally sensitive stewardship of land in the critical area while accommodating future growth, allowing for the prudent use of natural resources, and providing for the preservation of resources for future generations.

The Maryland coastal zone management program is part of the Chesapeake Bay Critical Area Commission program.

Maryland's Rural Legacy Program

The Rural Legacy Program, a keystone of Maryland's "Smart Growth Initiatives," was enacted by the 1997 Maryland General Assembly and signed into law May 22nd of that year. The Program encourages local governments and private land trusts to identify Rural Legacy Areas and to competitively apply for funds to complement existing land preservation efforts or to develop new ones. Easements or fee estate purchases are sought from willing landowners in order to protect areas vulnerable to sprawl development that can weaken an area's natural resources, thereby jeopardizing the economic value of farming, forestry, recreation and tourism.

Combating Sprawl

Development in Maryland is consuming land at an unprecedented rate. Maryland's Rural Legacy Program was created to protect those special places that represent the state's most valuable agricultural, forestry, natural, and cultural resources.

Benefits

With the goal of accelerating voluntary land conservation efforts, the Rural Legacy Program will save thousands of acres of land surrounding Maryland's cities, towns and villages. Greenbelts of forested land and open spaces surrounding populated areas protect Maryland's water quality by reducing pollution run-off into streams, rivers and the Chesapeake Bay. These same greenbelts provide habitat critical to the survival of many native plants and animals.

Conservation of natural areas through directed growth reduces the cost of public infrastructure necessary to support sprawl development. Furthermore, conservation efforts significantly impact the state's economy by supporting Maryland's resource-based economies of agriculture, forestry, outdoor recreation and tourism.

With an increased capacity to accelerate the purchase of public land and voluntary conservation easements, Maryland will, for the first time, be able to protect land at the same pace as development.

The Process

The Rural Legacy Advisory Committee, appointed by the Governor, and confirmed by the Senate, reviews all applications and makes recommendations to the Rural Legacy Board. The Rural Legacy Board, in turn, makes final recommendations to the Governor and the Board of Public Works. The Board of Public Works designates the Rural Legacy Areas and approves the grants for Rural Legacy funding.

Funding

During the first five years under the Rural Legacy Program, [between \\$110 and \\$128 million](#) will be committed to preserving from 50,000 to 75,000 acres of Maryland's farms, forests, and open spaces.

On the state level, the Rural Legacy Program is funded through a combination of Maryland Program Open Space dollars and general obligation bonds from the state's

capital budget. Local jurisdictions also contribute monies for a variety of land preservation efforts within these areas.

Maryland Wetlands and Riparian Rights

Maryland Code : ENVIRONMENT : TITLE 4. WATER MANAGEMENT :
SUBTITLE 1. SEDIMENT CONTROL : § 4-101.1. Definitions.

(d) Waters of this State.- "Waters of this State" includes:

(1) Both surface and underground waters within the boundaries of this State subject to its jurisdiction, including that part of the Atlantic Ocean within the boundaries of this State, the Chesapeake Bay and its tributaries, and all ponds, lakes, rivers, streams, storm drain systems, public ditches, tax ditches, and public drainage systems within this State, other than those designed and used to collect, convey, or dispose of sanitary sewage; and

(2) The flood plain of free-flowing waters determined by the Department of Natural Resources on the basis of the 100-year flood frequency.

Maryland Code : ENVIRONMENT : TITLE 16.

WETLANDS AND RIPARIAN RIGHTS : SUBTITLE 1.

IN GENERAL : § 16-101. Definitions. [1988, ch. 277, § 2; 1989, ch. 5, § 1; 1991, ch. 168.]

n) State wetlands.- "State wetlands" means any land under the navigable waters of the State below the mean high tide, affected by the regular rise and fall of the tide Wetlands of this category which have been transferred by the State by valid grant, lease, patent or grant confirmed by Article 5 of the Maryland Declaration of Rights shall be considered "private wetland" to the extent of the interest transferred.

Maryland Code : NATURAL RESOURCES : TITLE 8. WATERS : SUBTITLE 7.
STATE BOAT ACT : § 8-701. Definitions.

t) Waters of the State.- "Waters of the State" means any water within the jurisdiction of the State, the marginal sea adjacent to the State, and the high seas when navigated as part of a ride or journey to or from the shore of the State.

Maryland's GreenPrint Program

The following is from <http://intranet/greenways/greenprint/gip.html>: The GreenPrint program focuses on important natural resource lands that have been identified based on principles of landscape ecology and conservation biology. These lands have been identified as the result of a process undertaken by the Department of Natural Resources and its partners known as the Green Infrastructure Assessment (GIA).

The GIA is a computer tool developed to help identify and prioritize areas in Maryland for conservation and restoration. The goal is to target those areas of greatest statewide

ecological importance. The GIA was developed, in part, to provide a consistent approach to evaluating land conservation and restoration efforts in Maryland. It specifically attempts to recognize: (1) a variety of natural resource values (as opposed to a single species of wildlife, for example), (2) how a given place fits into a larger system, (3) the ecological importance of open space in rural and developed areas (4) the importance of coordinating local, state and even interstate planning, and (5) the need for a regional or landscape-level view for wildlife conservation.

The GIA resulted in two types of important resource lands - "**green hubs**" and "**green links**." **Green Hubs** are typically large (the average size of all green hubs in the state is approximately 2200 acres) contiguous areas that contain one or more of the following:

- Large blocks of contiguous interior forest (containing at least 250 acres, plus a transition zone of 300 feet)
- Large wetland complexes, with at least 250 acres of unmodified wetlands
- Important animal and plant habitats of at least 100 acres, including: rare, threatened, and endangered species locations; unique ecological communities; and migratory bird habitats
- Relatively pristine stream and river segments (which, when considered with adjacent forests and wetlands, are at least 100 acres) that support trout, mussels, and other unique aquatic organisms
- Existing protected natural resource lands which contain one or more of the above (for example - State Parks and Forests, National Wildlife Refuges, locally owned reservoir properties, major stream valley parks)

In the GIA model, the above features were identified from GIS data that existed statewide in Maryland. Developed areas and major roads were excluded, areas less than 100 contiguous acres were dropped, adjacent forest and wetland was added to the remaining green hubs, and the edges were smoothed. Green Hubs, which were separated by major roads and/or other human land uses, were ranked within their physiographic province for ecological importance. Rankings were based on factors considered important by professional biologists and natural resource experts. The results of the GIA were reviewed by field ecologists and county planners, and compared to other inventories of important natural resources in Maryland. Green Hub locations were largely consistent with existing natural areas according to these sources, although some small features may have been missed.

Green Links are linear features connecting green hubs together to help animals and plant seeds to move between green hubs. Green Links were identified using many sets of data, including land cover, roads, streams, elevation, flood plains, aquatic resource data, and fish blockages. Generally speaking, green links connect green hubs of similar type (green hubs containing forests are connected to one another; while those consisting primarily of wetlands are connected to others containing wetlands).

As for green links, they generally follow the best ecological or "most natural" routes between green hubs. Typically these are streams with wide riparian buffers and healthy

fish communities. Other good wildlife corridors include ridge lines or forested valleys. Developed areas and other unsuitable features were avoided.

Gaps in the green infrastructure system are categorized as developed, agricultural, or mined lands that could be targeted for restoration. For example, dredged or drained wetlands could be targeted for restoration. Structures such as underpasses or bridges can be designed to help wildlife movement where roadways and railways cross corridors and hubs. Similarly, stream blockages can be identified for fish ladders, bypasses, or other structures.

The GIA also provides an approach for ranking or prioritizing land protection efforts. Green hubs and green links can be ranked for a variety of natural resource values. These rankings are being done in such a way as to ensure that a given green hub would only be compared with similar green hubs in a particular (physiographic) region of the State. The GIA was done this way to prevent inappropriate decisions that could result by comparing the natural resource values of the forests of western Maryland with the wetlands of the eastern shore, for example. The GIA is also capable of being used for more local land and resource evaluations. By combining the results of the GIA with additional sources of information, it is possible to determine if and how a particular land conservation project will contribute to GreenPrint effort.

APPENDIX 12 - GEOLOGIC FORMATIONS OF SOUTHWESTERN CHARLES COUNTY

Patuxent - Arundel Formations (undifferentiated)

The Patuxent - Arundel Formations (undifferentiated) (Lower Cretaceous) is the oldest coastal plain unit present. Although the Arundel Formation is separated from the Patuxent in its type section along the Baltimore-Washington corridor, in the subsurface of southwestern Charles County, these units are not mapped separately. The Patuxent - Arundel Formations (undifferentiated) consist of interbedded sands, silts and clays. The sands are light gray to orange-brown, clayey quartzose sands, interbedded with light to dark gray to red clays and silty clays. The unit is about 350 to 450 feet thick in southwestern Charles County, and the top of the unit ranges from about 200 to 400 feet below sea level as it deepens to the east-southeast.

Patapsco Formation

The Patapsco Formation (Lower Cretaceous) overlies the Patuxent - Arundel Formations (undifferentiated). Older literature describes this unit as the Patapsco - Raritan Formation, but current usage places the entire unit in the Patapsco Formation. The Patapsco Formation consists of fine- to medium grained, light gray to orange-tan, and buff quartzose sands, with interbeds of variegated, light to dark gray, and red clays and silty clays. In southwestern Charles County, the Patapsco Formation is about 200 to 300 feet thick and the top of the formation ranges from about 20 to 60 feet below sea level. The Patapsco Formation and the Patuxent - Arundel Formations-(undifferentiated) were deposited in river and delta systems. Together these units are termed the Potomac Group.

Aquia Formation

The Aquia Formation (Upper Paleocene) overlies the Patapsco Formation in southwestern Charles County. The Aquia is a gray to greenish-gray, fine- to medium grained, glauconitic sand, with interbedded layers of sandy and silty clay. Glauconite is a greenish-black mineral that gives the characteristic greenish color to the Aquia Formation. Indurated (calcite cemented) zones, generally 2 to 3 feet thick occur in the Aquia. The Aquia is exposed at the surface in the western part of the county along low bluffs facing the Potomac River and along stream banks and valley walls of tributaries to the Potomac. The Aquia often weather to reddish-brown as the glauconites weather to limonites. The Aquia ranges from 20 to 60 feet thick in southwestern Charles County, and the top of the unit ranges from sea level to about 40 feet above sea level. The Aquia is marine in origin, and marine fossils including foraminifers, mollusks, shark's teeth, fish, and turtles are common.

Found at Douglas Point and Purse State Park, the Aquia Formation appears at the ground's surface in 10- to 20-foot high bluffs that parallel the shoreline and along parts of Wades Bay.

Surficial Pliocene and Pliocene Units

The Aquia Formation is overlain by a number of different Pliocene and Pleistocene age units in southwestern Charles County, and these are shown on the Geologic Map of Charles County (McCartan, 1989). The sediments mapped as Park Hall Formation (McCartan, 1989) were part of the unit termed the “upland deposits - western shore” in older literature and on the Geologic Map of Maryland (Cleaves and others, 1968). Similarly, the sediments mapped as Chicamuxen Church, Maryland Point, Omar, and Kent Island Formations by McCartan (1989), were part of the unit termed the “lowland deposits - western shore” in older literature and on the Geologic Map of Maryland (Cleaves and others, 1968). The Park Hall and Chicamuxen Church Formations are fluvial and estuarine deposits, and the Maryland Point, Omar, and Kent Island Formations are more dominantly estuarine.

Park Hall Formation

The Park Hall Formation (upper Pliocene) occurs in parts of southwestern Charles County and at its westernmost extent overlies the Aquia Formation. The Park Hall is a silty, fine-grained sand and fine- to medium-grained sand and clay interbedded with medium- to coarse-grained sand with pebbles, cobbles, and boulders. The Park Hall is typically pink, pale brown, or medium yellow orange (McCartan, 1989). The unit averages 30 to 35 feet thick, and ranges from about 20 to in places more than 60 feet thick.

Chicamuxen Church Formation

The Chicamuxen Church Formation (middle to lower Pleistocene) overlies the Aquia Formation in much of southwestern Charles County. The Chicamuxen Church is typically a grayish yellow, orange and brown, silty clay and muddy fine sand that grades downward to a pebbly mud or sand (McCartan, 1989). The unit thickness ranges from about 35 to 55 feet.

The Chicamuxen Church Formation forms the surface geologic unit from which soils are developed over most of the Wilson Farm Property. It also crops out around 40 to 50 feet in elevation about a half-mile inland from Douglas Point, and can also be found at Purse State Park. It tends to lie parallel to the shoreline.

Omar Formation

The estuarine facies of the Omar Formation (upper Pleistocene) crops out in the Douglas Point area. McCartan (1989) describes the Omar Formation in Charles County as a yellow to brown, muddy and muddy fine sand grading downward to fine gravel with coarse sand matrix. In southwestern Charles County, the Omar generally unconformably overlies the Chicamuxen Church Formation, but may in places unconformably overlie the Aquia and Potomac Group units.

Maryland Point Formation

The Maryland Point Formation (upper Pleistocene) overlies the Aquia Formation in parts of southwestern Charles County. The upper third of the Maryland Point Formation is a grayish orange, fine- to coarse-grained, well-sorted to poorly sorted sand that fines

downward to a gray to olive, poorly sorted, silty clay, and olive gray, pebbly clay at the base. The unit typically ranges from 25 to 40 feet thick, as it crops out at land surface (typically 20 to 30 feet above sea level), and the base is at 0 to 10 feet below sea level (McCartan, 1989).

The Maryland Point Formation, overlaying the Aquia Formation, is exposed along the western part of southern boundary of Wilson Farm and in the bluffs, ranging 10 to 30 feet in elevation, at Douglas Point. Where the Aquia Formation is absent, the Maryland Point Formation parallels the shoreline directly south of Douglas Point and on to Purse SP. The formation also appears at the ground's surface at Maryland Point Naval Observatory.

Kent Island Formation

The Kent Island Formation (upper Pleistocene) crops out in a small area along the Potomac River in parts of western Charles County. The Kent Island is mainly a tan to orange, fine- to medium-grained, moderately sorted to poorly sorted silty sand, with minor gray, silty to dewatered clay. The unit ranges from 5 to 20 feet thick with its base at about sea level (McCartan, 1989).

Cenozoic Colluvium

Cenozoic colluvium occurs in several places in southwestern Charles County. The Cenozoic colluvium consist of poorly sorted, massive to crudely bedded clay to cobble size material. It is generally yellow but tends to deep red-brown in older deposits. The colluvium is material eroded from the underlying units by slow creep or mass movement down hill. Typically the deposits are 3 to 10 feet thick and found as aprons at toes of scarps of Quaternary terraces and between adjacent Pliocene units (McCartan, 1989).

Quaternary Holocene Deposits Undivided

The Quaternary Holocene Deposits Undivided consist of recent unconsolidated sands, gravels, silts and clays occur in the area beneath marshes, adjacent to streams, and in places form the beach sands along the shore of the Potomac River (McCartan, 1989).

These Holocene deposits, created since the last ice age, occur in the area beneath wetlands, adjacent to or in stream valleys, and forming the shoreline deposits and beach material at Wilson Farm, Douglas Point, and Purse SP. They also appear at the ground's surface at Maryland Point Observatory.

APPENDIX 13 – SPECIAL STATUS SPECIES

Natural Heritage

Douglas Point

General biological inventories of Douglas Point conducted primarily in the 1970's provided data regarding the presence of rare plant and animal species (Charles County 1980). Surveys of fauna emphasized vertebrates. Considerable effort was devoted to flowering plants, with the least emphasis on grasses, sedges and rushes. The inventories were well documented and scientists verified identifications of specimens. This research is an invaluable resource regarding the distribution of species on the property at that time. Known populations and potential habitat for rare and declining plant and animal species and natural communities are discussed below according to the general habitat type present at Douglas Point.

Large contiguous forest

The American bald eagle is also known to nest within this large block of forest. Three nests are present on this property. Two were active in 2002, with adults incubating in March, but neither produced young that year. Protection of the forest within a one-quarter mile radius of the nests is required, with different levels of protection required in zones within that radius.

A brief study of breeding birds conducted within a portion of this property revealed nesting by several forest interior breeding bird species (FIDS) (Willoughby and Wilmot, 1995). These species require large blocks of contiguous forest in order to breed successfully, and they are declining in large part due to the loss of breeding habitat. Half of the 25 species identified by Maryland DNR as FIDS in the Critical Area were documented on this property by this study. In late May 2002, biologists with the Natural Heritage Program conducted a reconnaissance of the site and recorded 15 species of FIDS. Further survey would be required to determine which species currently breed on site. Five of the 14 FIDS that are identified as the most highly area sensitive species are among those documented on the property by Willoughby and Wilmot (1995). A sixth highly area sensitive species, Worm-eating warbler, was confirmed to be breeding on the parcel by staff of the Natural Heritage Program (June 2003). This species is believed to be the most area sensitive species in Maryland. Based upon the composition, condition and size of the forested habitats assessed in late May, there appears to be suitable habitat for 20 of the 25 FIDS identified as occurring in the Critical Area. Although further study is warranted, the existing information clearly demonstrates that this area is high quality FIDS habitat.

Old hardwood forest

Stands of old growth forests are potential habitat for several rare and declining species. Rare plant species include the small-fruited agrimony, narrow melicgrass and others known to occur elsewhere in old forest stands in southern Maryland, such as glade fern. The intermittent streams flowing through these stands are suitable habitat for several rare

species of Odonates (dragonflies and damselflies). Suitable habitat is present for the mud salamander, a species under review for listing as state rare.

Calcareous slopes

Along the wetlands that flow to the Potomac River, steep slopes expose geologic formations that are rich in shell material. The calcareous soils on these slopes support natural communities that are rare in southern Maryland. The State Watch List plant species, *Carex albursina*, is locally abundant on the slopes and is characteristic of this calcareous hardwood community. Other indicator species include Redbud, Leafcup and showy Orchids.

Potomac wetlands

The forested watersheds feeding these wetlands maintain the water quality and hydrology with little evidence of recent artificial disturbance. The wetlands offer suitable habitat for a number of rare plant and animal species. Beaver activity has created areas of open water that offer suitable habitat for American frog's bit. The fresh tidal areas nearest the Potomac may support populations of rare mussels known from the vicinity, rainbow snake and queen snake, and several rare plant species known from the vicinity. Claspingleaved pondweed has been documented in the adjacent tidal Potomac (plants found on the shoreline most recently in 1977, no subsequent surveys have been conducted).

Historically reported from the Potomac at Liverpool Point, Indian Head, and Bryans Point, a rare fish, the bridle Shiner, may persist here. This area will be targeted for survey under an existing contract for fish surveys. In the emergent nontidal marsh and shrub swamp, a rare sedge, was documented in 2002 by staff of the Natural Heritage Program. The least bittern as well as other species of Odonates and plants may inhabit the nontidal and shrub wetlands.

Groundwater seepage wetlands

Brief surveys of the seepage wetlands revealed that these are exceptional communities with the potential to support a number of rare plant species. The invertebrate and vertebrate fauna of the seepage wetlands have not been inventoried, but the area offers suitable habitat for several rare species. Such seeps typically support subterranean invertebrates and they may support the highly state rare (and globally rare) tidewater amphipod. Habitat is also present for rare Odonates. The seepage wetlands are also suitable habitat for the Eastern mud salamander (proposed State Rare).

Xeric, sandy upland fields and forest

Old fields, roadsides, and upland forest on dry, sandy soil support several rare plant and animal species. The rare species of old fields and roadsides, are threatened by natural succession. Encroaching pines appear to have eliminated the open habitat once occupied by leopard's bane. Reported in 1980 (Jensen, *et al*), this rare plant has not been observed during searches conducted over the last five years. The frosted elfin also was reported historically for this area. The larval host plant for this rare butterfly was believed to have been wild indigo. However, large stands of this sun-loving species can no longer persist in the ever-increasing shade of the pines. Recent surveys have failed to relocate this

species. Two uncommon insects persist and take advantage of existing small openings in the extensive, mature, dry upland forest.

Historically, fire created large openings in the forests of southern Maryland. Plants that thrived in the full exposure to sunlight colonized these openings. Fire suppression practices have prevented the creation of natural canopy openings, and many species that require full exposure to sun are becoming rare. Virginia pine and other woody plants are encroaching upon the dry, sandy portions of the old hay fields that provide habitat for populations of rare species.

Maryland Point Naval Observatory

No assessment has been conducted to identify the presence of special status species.

Wilson Farm

A comprehensive survey for rare species has not been conducted at the Wilson Farm property. However, the mature forested ravines to the north and south of the entrance drive provide suitable habitat for several rare species currently and historically known to occur in the general vicinity. Future field surveys may reveal the presence of several rare plant species often associated with the calciferous soil of the southern ravine, such as large-seeded forget-me-not), small-flowered baby-blue-eyes, and narrow melicgrass. North of the entrance road, the mature forest seems to be more acidic with wetlands that appear to be more persistently saturated. Both ravines are steeply sloped and have very fragile, erodible soils. The slopes should remain undisturbed. The old fields on the level upland are succeeding to deciduous forest, and a large forested connection should be retained between the ravines.

Purse State Park

While no comprehensive survey for rare species has been conducted at Purse State Park, two currently are known to occur on the property. Both species take advantage of small openings in the mature upland forest. These species should be monitored to determine if trail management practices and natural canopy gaps suffice to maintain the populations. The large marsh at Purse is generally similar to the Potomac marshes described above for the Douglas Point and may harbor some of the same rare species described above.

Wildlife

In addition to the Shortnose Sturgeon (endangered) and the Atlantic Sturgeon (rare) there are other important species of concern as illustrated on the following table:

Important commercial and recreational fisheries of the tidal Potomac River in the vicinity of the Douglas Point properties

Common Name	Scientific Name
Striped bass ^{1/}	<i>Morone saxatilis</i>
^{1/}	<i>Morone americana</i>
Yellow perch	<i>Perca flavescens</i>
Channel catfish ^{1/}	<i>Ictalurus punctatus</i>

Largemouth bass ^{1/}	<i>Micropterus salmoides</i>
Blue crab ^{1/}	<i>Callinectes sapidus</i>
American eel	<i>Anguilla rostrata</i>
Atlantic menhaden	<i>Brevoortia tyrannus</i>
Gizzard shad	<i>Dorosoma cepedianum</i>
Alewife and Blueback herring	<i>Alosa pseudoharengus and aestivalis</i>
Spot	<i>Leiostomus xanthurus</i>
American shad ^{2/}	<i>Alosa sapidissima</i>
Hickory shad ^{2/}	<i>Alosa mediocris</i>

Notes:

1/ Important species are the species which support significant commercial and/or recreational fisheries and are ecologically important.

2/ Current moratorium in place prohibiting the commercial or recreational harvest at any time since 1980. Restoration efforts appear to be working.

Critical Area – Douglas Point Properties

Douglas Point

Approximately 202.7 acres of the Douglas Point property lies within the Chesapeake Bay Critical Area. The Critical Area Buffer on this property would also be expanded beyond 100-foot in some locations to protect steep slopes and wetlands. The Critical Area Regulations also require identification of FIDS and special species habitat and nesting sites of American Bald Eagles which can all be found on this property.

Maryland Point Naval Observatory

The Critical Area regulations would also be applicable on this property, although a detailed assessment has not yet been conducted

Wilson Farm

The Critical Area Buffer on this property would be expanded beyond 100-foot in some locations due to the presence of steep slopes and wetlands. Some access through the buffer exists due to the presence of a former marina site and several structures, some of which have been removed.

Purse State Park

The Critical Area regulations would also be applicable on this property, although such an evaluation has not yet been conducted. It appears, from a cursory assessment, that the Critical Area Buffer would be expanded beyond 100 feet due to the presence of steep slopes, and habitat identification requirements would need to be addressed.

APPENDIX 14 – ECONOMIC IMPACT SCENARIOS

Methodology, Assumptions, Limitations and Sources

Introduction

The economic impact scenarios for all of the alternatives, including the Proposed Plan are based on collecting local and regional data from several park and other public lands in southern Charles County, telephone interviews with outfitters, using the U.S. Fish and Wildlife Service's 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation for Maryland, and applying the direct expenditures to a regional input-output modeling system (RIMS II). These potential economic impacts are plausible, and subject to the availability of data, methodology used, and assumptions and limitations. Last and most important, and regardless of the alternative and respective impacts, this section provides or illustrates the positive economic effects of outdoor recreation and tourism that may be realized by this project.

A. Methodology

I. Review Annual Visitation-User Figures from Surrounding Public Lands

Recreational use and visitation data were examined from surrounding public land units such as Doncaster State Forest, Smallwood State Park and Friendship Landing Park, as well existing hunting data for the Douglas Point and Wilson Farm properties.

II. Assign Per Day Trip Direct Expenditures Plus Other Direct Expenditures\Sales

A. Existing annual visitation and recreation user figures from the other surrounding public land units, were used to ascribe projected visitation\user figures for each alternative for the public lands that fall under the Lower Potomac River Coordinated Management Plan: Purse State Park, Maryland Point, Wilson Farm and Douglas Point.

Referred to as direct expenditures, the total annual number of projected recreation user types for each alternative was assigned an average per person per day trip direct expenditure such as purchases of gas and lunch. The U.S. Fish and Wildlife's 2001 Maryland Survey was used as the primary source to determine the average per day trip expenditures for hunters, anglers and general recreational use categories. A per day trip is all of a day, or part of a day from a given location to any of the LPRCMP properties. (For additional information for types of expenditures for each recreational user category, refer to Assumptions and Limitations.) The following are profiles of the user categories:

Table 19 (U.S. Fish and Wildlife, 2001 Maryland Survey), Anglers

	Trip Related Expenses Only Total	Average Per Year-Day Angler Dollars
Food	58,712,000	92 or 51% (26% grocery\25% hospitality)

Lodging	19,766,000	31 or 17% (15% public\private campgrounds, 2% motel)
Transportation	36,373,000	57 or 32% (gas; auto related services)
(Less Other Costs 130,177,000)		206 e.g. bait, ice
Total	\$114,851,000	\$180

Average Days Per Angler: 11 Average trip expenditure per day: \$16.40 (Less Other Costs)
Average trip expenditure per day: \$33.00 with Other Costs

*U.S. Fish and Wildlife data average is based on anglers who have boats and anglers who do not have boats. Equipment purchases are not included in the direct expenditures.

General Recreation - Day Use Only, (from U.S. Fish and Wildlife, 2001 Maryland Survey, Table 33, Wildlife Observation Category, Expenditures in Maryland by U.S. Residents for Wildlife Watching, e.g. hikers, kayakers, wildlife observers, mountain bikers, picnickers)

	Trip Related Expenses Only Total	Average Per Year\Day Dollars
Food	57,731,000	108 or 66% (33% grocery\33% hospitality)
Transportation	30,482,000	57 or 34% (gas-related services)
*Other Costs	4,949,000	9 (e.g. equipment rentals etc.)
Total	\$93,162,000	\$165

Average Days Per Gen. Recreation User: 17
Average trip expenditure per day without Other Costs: \$9.75 per day
Average trip expenditure per day with Other Costs: \$10.25 per day

*Small Sample Size-accuracy limited; lodging expenditures from wildlife observation category removed to capture possible expenditure profile of day users only. Equipment purchases are not included in the average daily trip expenditures.

Table 20 (U.S. Fish and Wildlife, 2001 Maryland Survey), Expenditure in Maryland by U.S. Residents for Hunters (state and nonstate)

Trip Related Expenses Only Total		Average Per Year\Day Hunter Dollars
Food	13,350,000	92 or 52% (26% grocery, 26% hospitality)
*Lodging	939,000	6 or 3% (3% public campgrounds)
Transportation	11,416,000	79 or 45% (gas-related services)
(Less Other Costs rentals etc.)	6,745,000*	46 e.g. heating, cooking fuel, equipment
Total	\$25,705,000	\$177

*Equipment purchases and Other Costs are not included in the average daily trip expenditures- small sample size of US Fish and Wildlife Survey for lodging-accuracy limited.

Average Days Per Hunter: 12
Average trip expenditure per day without Other Costs: \$14.75
Average trip expenditure per day with Other Costs: \$18.00

*Refer to assumptions and limitations for recreational user categories. Equipment purchases for hunters not included in direct expenditures.

B. Selective Harvesting (Alternative III Only)

Is calculated at one timber contract sale to one timber company at \$50,000 annually.

C. Construction Costs for Public Facilities

Are calculated on very general, build-out cost scenarios such as the size of a visitor center times the construction cost per square foot and other facilities such as parking lots and restrooms. (See assumptions and limitations.)

D. Outfitters

Includes small businesses such as camping\kayaking-nature tourism outfitters at 20 trips per year x 7 users x \$90.00 per user = \$12,600.

III. Input Projected Direct Expenditures into RIMS to Obtain Projected Total Economic Outputs or Benefits (Regional Input-Output Modeling System)

The total, annual projected direct expenditures, minus Other Costs for each recreational user, plus the other direct expenditures/sales for the other project categories (timber-selective harvesting, on-site facility construction, and guide services) are applied to the RIMS II system. Devised and managed by the U.S. Department of Commerce, this I-O modeling, RIMS defines a region by one or more counties. For the purposes of these economic impact scenarios, RIMS II calculates total economic outputs and earnings. RIMS II provides industry sectors and input-output multipliers for a defined region such as hotel, camping\recreation, and gas for example, are identified and applied to the different categories of direct expenditures using multipliers.

Assumptions and Limitations

The Region

The economic region is defined as Charles, Calvert and Prince Georges Counties. It is assumed that the majority of direct retail expenditures made by the recreational user groups would occur in this region for the purchases of services or products and that the majority of the affected workforce is located in this region. Of the 37,000 people who work in Charles County for example, 29,000 are county residents and the balance are from Calvert, St. Mary's, Prince George' and the metro area. It is assumed that most of the industries that supply products to local retail businesses are not located in the defined region (e.g. food for grocery stores). Therefore for the I-O analysis, only the retail profit for certain businesses (gas, auto services and grocery), not the total direct expenditures of the consumer, could be used to determine total economic output and earnings. In some cases then, the total economic output is less than the total direct expenditures.

The cost-benefits of the alternatives are not analyzed. For example, the model does not consider the negative impacts that may occur if recreational users decided to not spend

their money in one part of the state as a consequence of visiting one of the LPRCMP properties in the defined region.

Projected Economic Impacts and Numbers of Recreation Users

The projected number of users and respective economic impacts are plausible, economic impact scenarios. It is not feasible to determine the actual number of users and categories of users who may use the public land units within the Study Area within any statistical accuracy. The projected economic impacts provide a reasonable range based on existing uses at other public land units that are located in the vicinity of the Study Area.

Time Period for Economic Effects and Time Horizon

The RIMS model assumes a cumulative, one-year period for economic impact. Therefore, the projected numbers of recreational users and other inputs of direct expenditures are based on a one-year time frame.

The economic impacts are not projected to occur at any specific time in the future and the economic return is estimated in present day dollars. It is assumed that the time frame is long-term or well over five years.

Spending Profiles of Users and Calculations

Calculations for per day trip expenditures for hunters, the general recreation categories, and anglers were made from using the data from the 2001 U.S. Fish and Wildlife Survey. The average per day trip costs are a statewide average, which do not take into account local spending profiles of these user groups in the defined region.

Data is not available to identify where the different recreational users reside or may come from to visit the existing public land units in the Study Area – local residents who use the LPRCMP public lands would spend less per day trip compared to those who live elsewhere in the county, defined region or in the state. In general, the overall, average daily per trip expenditures taken from the 2001 Fish and Wildlife Maryland Survey, utilize the spending profiles of state resident and non-state resident recreational users, and discounts the economic effects of local or residential users who live within a mile or few miles of the destination.

The U.S. Fish and Wildlife's average expenditures for each recreational user category also is subject to variance, because the average expenditures data sometimes aggregates a number of different spending criteria for certain recreational use categories, such as salt and freshwater fishing and anglers who own boats and anglers who do not use boats etc.

It is assumed that other recreational users within the General Recreation - Day Use Category and General Recreation – Day and Overnight Use Category will have a similar daily spending profile as Wildlife Observers under Table 33 of the 2001 Survey from the U.S. Fish and Wildlife Service. (An area or regional survey information regarding this assumption is not available. One recreational spending profile study conducted by the U.S. Forest Service has determined that in general, the spending profile of a hiker,

wildlife observer and some other general recreation user groups do not vary significantly, depending on travel distance and time.) The actual, average daily spending profiles for other recreation groups such as kayakers, hikers etc., therefore may be greater or less per day.

Equipment Purchases and Other Costs: For the purposes of the I\O analysis, Equipment Purchases and Other Costs under the Fish and Wildlife Survey were not included in the calculations for economic output and earnings. This is because there is insufficient survey data from the 2001 Maryland Survey.

Transportation: The 2001 Maryland Survey asked how much do users spend on both private (car) and public transportation. The response data from this survey category is aggregated, but the U.S. Fish and Wildlife's 2001 National Survey indicates that the percentage of public transportation costs to total transportation costs is approximately 12%. For these economic scenarios, it is assumed that all transportation costs will be assigned to private transportation (gas-retail) rather than private and public modal subcategories.

Lodging: The 2001 Maryland Survey asked how much do users spend on camping, motels, lodges, etc? The response data from this lodging survey category is aggregated. It is assumed that based on overnight visitation at Smallwood State Park for example, that the majority of the direct expenditures for lodging are assigned to public and private campgrounds.

The economic impacts do not consider either the positive or negative effects on the numbers and type of recreational users (categories) in a given area due to potential conflicts with those uses.

It is recognized that individuals may participate in more than one recreational use category such as fishing and hunting on these public lands, however for purposes of developing these economic impact scenarios, the different user categories and cumulative totals of visitation and expenditures are presented separately.

Timber Harvest

Direct effects are calculated on issuing a contract to a company for one year at an estimated \$50,000 per contract.

On-Site Construction

It is assumed that the on-site construction contracts will be issued for one year. Direct economic impacts from construction includes for example, the visitor center, parking lots and restrooms. The economic impacts do not consider the ramifications of whether these projects will actually be approved or not approved due to the future need for reviewing all projects through the permitting process. Therefore, the actual economic effects of on-

site construction are contingent on future site planning and design, cost and feasibility estimates, and compliance with all state and federal laws.

Economic Impact Scenarios				
User Category or Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Recreation Users Anglers		2,000 Users Total Direct Expenditures: \$66,000 Total Direct Expenditures without Other Costs: \$32,800 Total Outputs: \$30,865 Earnings: \$5,719	5,000 Users Total Direct Expenditures: \$165,000 Total Direct Expenditures without Other Costs: \$82,000 Total Outputs: \$77,067 Earnings: 14,185	2,000 Users Total Direct Expenditures: \$66,000 Total Direct Expenditures without Other Costs: \$32,800 Total Outputs: \$30,865 Earnings: \$5,719
General Recreation – Day Use Only		30,000 Users Total Direct Expenditures: \$307,500 Total Direct Expenditures without Other Costs: \$292,500 Total Outputs: \$238,664 Earnings: \$48,487	40,000 Users Total Direct Expenditures: \$410,000 Total Direct Expenditures without Other Costs: \$390,000 Total Outputs: \$317,595 Earnings: \$64,518	30,000 Users Total Direct Expenditures: \$307,500 Total Direct Expenditures without Other Costs: \$292,500 Total Outputs: \$317,595 Earnings: \$64,518
General Recreation – Day and Overnight Use		1,000 Users Total Direct Expenditures: \$14,300 Total Direct Expenditures without Other Costs: \$13,750 Total Outputs: \$14,954 Earnings: \$2,634	5,000 Users Total Direct Expenditures: \$71,500 Total Direct Expenditures without Other Costs: \$68,750 Total Outputs: \$72,282 Earnings: \$13,040 Same as Alternative 21	1,000 Users Total Direct Expenditures: \$14,300 Total Direct Expenditures without Other Costs: \$13,750 Total Output: \$14,954 Earnings: \$2,634 Same as Alternative 2
Hunters	500 Users Total Direct Expenditures: \$9,300 Total Direct Expenditures without Other Costs: \$7,375 Total Output: \$5,698 Earnings: \$175	600 Users Total Direct Expenditures: \$11,160 Total Direct Expenditures without Other Costs: \$8,850 Total Output: \$6,831 Earnings: 1,363		
Selective Harvesting	-	-	Total Direct Expenditures/Sales: \$50,000 Total Output: \$72,500 Earnings: \$8,500	
On-Site Facility Construction	-	\$824,500 (visitor center, water access/lot, primitive camping, restrooms) plus A/E 153,400 = Total Direct Expenditures: \$977,900 Total Output: \$1,672,000 Earnings: \$264,000	\$1,865,000 (visitor center, water access, 15 site camp loop, restrooms) plus A/E = Total Direct Expenditures: \$2,205,000 Total Output: \$3,770,000 Earnings: \$595,000	\$824,500 (visitor center, water access, camping and restrooms) plus A/E = Total Direct Expenditures: \$977,900 Total Output: \$1,672,000 Earnings: \$264,000
Outfitters-Guide Services	-	140 Users Total Direct Expenditures: \$12,600 Total Output: \$19,150 Earnings: \$3,400	140 Users Total Direct Expenditures: \$12,600 Total Output: \$19,150 Earnings: \$3,400	140 Users Total Direct Expenditures: \$12,600 Total Output: \$19,150 Earnings: \$3,400
POTENTIAL TOTAL	\$9,300	\$1,389,460	\$2,925,260	\$1,389,460

Economic Impact Scenarios				
User Category or Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4
DIRECT EXPENDITURES WITH OTHER COSTS*1				
POTENTIAL TOTAL OUTPUT (MINUS OTHER COSTS)*2	\$5,698	\$1,982,464	\$4,335,425	\$1,982,464
POTENTIAL EARNINGS(MINUS OTHER COSTS)	\$175	\$325,603	\$700,006	\$325,603
*1 – Total Direct Expenditures includes: projected, total annual recreation user expenditures, one selective harvest per year, on-site facilities construction and guide services. *2 – Outputs and earnings are calculated based on direct expenditures minus Other Costs as defined in the U.S. Fish and Wildlife's Maryland Survey				

References

Interviews with Atlantic Kayak and Amphibious Expeditions

1) Would you use the LPRCMP public lands in the study area for a day trip?
Atlantic (Judy Lathrop, interview by M. Spencer on 6\13\03) –yes, have been making six day trips to Malloes Bay per year from Occoquan, Virginia.
Amphibious (G. Schaumberg, interview by M. Spencer 6\12\03) – yes, depending on facilities and conditions.

2) How many day trips do you think we would or could conduct on an annual basis to this area?
Atlantic –see above- six day trips.
Amphibious – maximum of two day and/or overnight trips to one destination per year is what we've been doing.

3) How many users per trip and cost per trip per day?
Atlantic – average 6-15 day users @ 90.00 ea.-most of our business is day use
Amphibious – average 6 day users @ \$85 ea.

4) Would you use the LPRCMP public lands in the study area for an overnight trip if facilities were available and how many trips per year? Fee per user trip?
Atlantic- possibly; \$100 per day for overnight trips
Amphibious-yes if facilities were available-maximum of two-day and/or overnight trips to one destination per year; \$100 per day for overnight trips with average of 7 users.

Sample Calculations: 6 day trips per year x 7 people x \$90 x 2 contracts =\$7,560

State Forest and Park Service, Public Lands Visitation (Figures)

	FY02	FY01	FY00
Chapel Point	7,887	7,160	10,464*
Purse	6,727	3,585	5,022*

Smallwood	61,514	65,041	77,634
*Estimated			

Smallwood State Park, Visitation and Income

Projected Income Smallwood for Year: May\July: average camping – 2,507\3,286.00 per month x 6 month season= 17,400 yr. cabins – 3,043\2,144 per month x 6 month season= 15,560 yr.

Approximate visitation at Smallwood for Year: 3,932 campers, 976 group campers, 25% of campers may be county residents; 12,000 boat launches a year-estimate-which excludes tournament boaters.

Hunting Permits2002-2003: Douglas Pt. - 451 hunters Wilson Farm: 70 parties (x2 per party) of waterfowl hunters and 51 hunters land based.

Doncaster State Forest: total annual visitation –1,500 Equestrian Users – 1,000 Hunters – 350 Mountain Bikers – 50 (75% are local)

DNR Forest Service Estimate, Southern Regional Office: East Tract. Douglas Point, Selective Harvest @ \$50,000 sale per year.

Construction Estimates, Example Only and Subject to Site Design and Cost Estimates

Visitor Center-\$233 sq. ft. (does not include parking or site preparation); \$5.00 square foot for parking lots and roads; \$200,000 boat ramp and/or boat access improvements (does not include road improvements); comfort stations w\water - \$200,000; Clivus\composting toilet - \$25,000; 15 site camp loop with utilities - \$150,000; 15% A\E costs for facilities other than buildings and 20% for all buildings.

